

SELECTIVE GAP-FILL PROCESS

ABSTRACT

[0049] Methods for selectively depositing a solid material on a substrate having gaps of dimension on the order of about 100 nm or less are disclosed. The methods involve exposing the substrate to a precursor of a solid material, such that the precursor forms liquid regions in at least some of the gaps, followed by exposing the substrate to conditions that evaporate the liquid precursor from regions outside the gaps but maintain at least some of the liquid regions in the gaps. The liquid precursor remaining in the gaps is then converted to solid material, thereby selectively filling the gaps with the material.